

(1) encourage participation by United States firms in actions taken to carry out subsection (a); and

(2) provide grants and other financial support for feasibility and resource assessment studies conducted in, or intended to benefit, less developed countries.

(c) Authorization of appropriations

There are authorized to be appropriated to carry out this section \$5,000,000 for each of fiscal years 2008 through 2012.

(Pub. L. 110–140, title VI, §624, Dec. 19, 2007, 121 Stat. 1684.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

§ 17204. High cost region geothermal energy grant program

(a) Definitions

In this section:

(1) Eligible entity

The term “eligible entity” means—

- (A) a utility;
- (B) an electric cooperative;
- (C) a State;
- (D) a political subdivision of a State;
- (E) an Indian tribe; or
- (F) a Native corporation.

(2) High-cost region

The term “high-cost region” means a region in which the average cost of electrical power exceeds 150 percent of the national average retail cost, as determined by the Secretary.

(b) Program

The Secretary shall use amounts made available to carry out this section to make grants to eligible entities for activities described in subsection (c).

(c) Eligible activities

An eligible entity may use grant funds under this section, with respect to a geothermal energy project in a high-cost region, only—

- (1) to conduct a feasibility study, including a study of exploration, geochemical testing, geomagnetic surveys, geologic information gathering, baseline environmental studies, well drilling, resource characterization, permitting, and economic analysis;
- (2) for design and engineering costs, relating to the project; and
- (3) to demonstrate and promote commercial application of technologies related to geothermal energy as part of the project.

(d) Cost sharing

The cost-sharing requirements of section 16352 of this title shall apply to any project carried out under this section.

(e) Authorization of appropriations

There are authorized to be appropriated such sums as are necessary to carry out this section.

(Pub. L. 110–140, title VI, §625, Dec. 19, 2007, 121 Stat. 1685.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

PART C—MARINE AND HYDROKINETIC RENEWABLE ENERGY TECHNOLOGIES

§ 17211. Definition

For purposes of this part, the term “marine and hydrokinetic renewable energy” means electrical energy from—

- (1) waves, tides, and currents in oceans, estuaries, and tidal areas;
- (2) free flowing water in rivers, lakes, and streams;
- (3) free flowing water in man-made channels; and
- (4) differentials in ocean temperature (ocean thermal energy conversion).

The term “marine and hydrokinetic renewable energy” does not include energy from any source that uses a dam, diversionary structure, or impoundment for electric power purposes.

(Pub. L. 110–140, title VI, §632, Dec. 19, 2007, 121 Stat. 1686.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

SHORT TITLE

This part known as the “Marine and Hydrokinetic Renewable Energy Research and Development Act”, see Short Title note set out under section 17001 of this title.

§ 17212. Marine and hydrokinetic renewable energy research and development

(a) In general

The Secretary, in consultation with the Secretary of the Interior and the Secretary of Commerce, acting through the Under Secretary of Commerce for Oceans and Atmosphere, shall establish a program of research, development, demonstration, and commercial application to expand marine and hydrokinetic renewable energy production, including programs to—

- (1) study and compare existing marine and hydrokinetic renewable energy technologies;
- (2) research, develop, and demonstrate marine and hydrokinetic renewable energy systems and technologies;
- (3) reduce the manufacturing and operation costs of marine and hydrokinetic renewable energy technologies;
- (4) investigate efficient and reliable integration with the utility grid and intermittency issues;
- (5) advance wave forecasting technologies;
- (6) conduct experimental and numerical modeling for optimization of marine energy conversion devices and arrays;
- (7) increase the reliability and survivability of marine and hydrokinetic renewable energy technologies, including development of corrosive-resistant materials;
- (8) identify, in conjunction with the Secretary of Commerce, acting through the Under

Secretary of Commerce for Oceans and Atmosphere, and other Federal agencies as appropriate, the potential environmental impacts, including potential impacts on fisheries and other marine resources, of marine and hydrokinetic renewable energy technologies, measures to prevent adverse impacts, and technologies and other means available for monitoring and determining environmental impacts;

(9) identify, in conjunction with the Secretary of the Department in which the United States Coast Guard is operating, acting through the Commandant of the United States Coast Guard, the potential navigational impacts of marine and hydrokinetic renewable energy technologies and measures to prevent adverse impacts on navigation;

(10) develop power measurement standards for marine and hydrokinetic renewable energy;

(11) develop identification standards for marine and hydrokinetic renewable energy devices;

(12) address standards development, demonstration, and technology transfer for advanced systems engineering and system integration methods to identify critical interfaces;

(13) identifying¹ opportunities for cross fertilization and development of economies of scale between other renewable sources and marine and hydrokinetic renewable energy sources; and

(14) providing² public information and opportunity for public comment concerning all technologies.

(b) Report

Not later than 18 months after December 19, 2007, the Secretary, in conjunction with the Secretary of Commerce, acting through the Undersecretary of Commerce for Oceans and Atmosphere, and the Secretary of the Interior, shall provide to the Congress a report that addresses—

(1) the potential environmental impacts, including impacts to fisheries and marine resources, of marine and hydrokinetic renewable energy technologies;

(2) options to prevent adverse environmental impacts;

(3) the potential role of monitoring and adaptive management in identifying and addressing any adverse environmental impacts; and

(4) the necessary components of such an adaptive management program.

(Pub. L. 110-140, title VI, §633, Dec. 19, 2007, 121 Stat. 1686.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110-140, set out as a note under section 1824 of Title 2, The Congress.

¹ So in original. Probably should be “identify”.

² So in original. Probably should be “provide”.

§ 17213. National Marine Renewable Energy Research, Development, and Demonstration Centers

(a) Centers

The Secretary shall award grants to institutions of higher education (or consortia thereof) for the establishment of 1 or more National Marine Renewable Energy Research, Development, and Demonstration Centers. In selecting locations for Centers, the Secretary shall consider sites that meet one of the following criteria:

(1) Hosts an existing marine renewable energy research and development program in coordination with an engineering program at an institution of higher education.

(2) Has proven expertise to support environmental and policy-related issues associated with harnessing of energy in the marine environment.

(3) Has access to and utilizes the marine resources in the Gulf of Mexico, the Atlantic Ocean, or the Pacific Ocean.

The Secretary may give special consideration to historically black colleges and universities and land grant universities that also meet one of these criteria. In establishing criteria for the selection of the Centers, the Secretary shall consult with the Secretary of Commerce, acting through the Under Secretary of Commerce for Oceans and Atmosphere, on the criteria related to ocean waves, tides, and currents including those for advancing wave forecasting technologies, ocean temperature differences, and studying the compatibility of marine renewable energy technologies and systems with the environment, fisheries, and other marine resources.

(b) Purposes

The Centers shall advance research, development, demonstration, and commercial application of marine renewable energy, and shall serve as an information clearinghouse for the marine renewable energy industry, collecting and disseminating information on best practices in all areas related to developing and managing enhanced marine renewable energy systems resources.

(c) Demonstration of need

When applying for a grant under this section, an applicant shall include a description of why Federal support is necessary for the Center, including evidence that the research of the Center will not be conducted in the absence of Federal support.

(Pub. L. 110-140, title VI, §634, Dec. 19, 2007, 121 Stat. 1687.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110-140, set out as a note under section 1824 of Title 2, The Congress.

§ 17214. Applicability of other laws

Nothing in this part shall be construed as waiving, modifying, or superseding the applicability of any requirement under any environmental or other Federal or State law.

(Pub. L. 110-140, title VI, §635, Dec. 19, 2007, 121 Stat. 1688.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110-140, set out as a note under section 1824 of Title 2, The Congress.

§ 17215. Authorization of appropriations

There are authorized to be appropriated to the Secretary to carry out this part \$50,000,000 for each of the fiscal years 2008 through 2012, except that no funds shall be appropriated under this section for activities that are receiving funds under section 16231(a)(2)(E)(i) of this title.

(Pub. L. 110-140, title VI, § 636, Dec. 19, 2007, 121 Stat. 1688.)

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110-140, set out as a note under section 1824 of Title 2, The Congress.

PART D—ENERGY STORAGE FOR
TRANSPORTATION AND ELECTRIC POWER**§ 17231. Energy storage competitiveness****(a) Short title**

This section may be cited as the “United States Energy Storage Competitiveness Act of 2007”.

(b) Definitions

In this section:

(1) Council

The term “Council” means the Energy Storage Advisory Council established under subsection (e).

(2) Compressed air energy storage

The term “compressed air energy storage” means, in the case of an electricity grid application, the storage of energy through the compression of air.

(3) Electric drive vehicle

The term “electric drive vehicle” means—

(A) a vehicle that uses an electric motor for all or part of the motive power of the vehicle, including battery electric, hybrid electric, plug-in hybrid electric, fuel cell, and plug-in fuel cell vehicles and rail transportation vehicles; or

(B) mobile equipment that uses an electric motor to replace an internal combustion engine for all or part of the work of the equipment.

(4) Islanding

The term “islanding” means a distributed generator or energy storage device continuing to power a location in the absence of electric power from the primary source.

(5) Flywheel

The term “flywheel” means, in the case of an electricity grid application, a device used to store rotational kinetic energy.

(6) Microgrid

The term “microgrid” means an integrated energy system consisting of interconnected loads and distributed energy resources (including generators and energy storage devices),

which as an integrated system can operate in parallel with the utility grid or in an intentional islanding mode.

(7) Self-healing grid

The term “self-healing grid” means a grid that is capable of automatically anticipating and responding to power system disturbances (including the isolation of failed sections and components), while optimizing the performance and service of the grid to customers.

(8) Spinning reserve services

The term “spinning reserve services” means a quantity of electric generating capacity in excess of the quantity needed to meet peak electric demand.

(9) Ultracapacitor

The term “ultracapacitor” means an energy storage device that has a power density comparable to a conventional capacitor but is capable of exceeding the energy density of a conventional capacitor by several orders of magnitude.

(c) Program

The Secretary shall carry out a research, development, and demonstration program to support the ability of the United States to remain globally competitive in energy storage systems for electric drive vehicles, stationary applications, and electricity transmission and distribution.

(d) Coordination

In carrying out the activities of this section, the Secretary shall coordinate relevant efforts with appropriate Federal agencies, including the Department of Transportation.

(e) Energy Storage Advisory Council**(1) Establishment**

Not later than 90 days after December 19, 2007, the Secretary shall establish an Energy Storage Advisory Council.

(2) Composition**(A) In general**

Subject to subparagraph (B), the Council shall consist of not less than 15 individuals appointed by the Secretary, based on recommendations of the National Academy of Sciences.

(B) Energy storage industry

The Council shall consist primarily of representatives of the energy storage industry of the United States.

(C) Chairperson

The Secretary shall select a Chairperson for the Council from among the members appointed under subparagraph (A).

(3) Meetings**(A) In general**

The Council shall meet not less than once a year.

(B) Federal Advisory Committee Act

The Federal Advisory Committee Act (5 U.S.C. App.) shall apply to a meeting of the Council.